AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for determining a network topology in a peer-to-peer network, the method comprising:

performing a tracerouting operation to obtain a traceroute from a first client to a directory server, wherein a traceroute is a map of a path through which a packet travels between the first client and the directory server, including addresses of routers through which the packet travels;

determining a MAC address of a gateway of the first client;

sending the traceroute and the MAC address to the directory server from the first client; and

using the traceroute at the directory server to build a router graph;~~graph,~~

wherein the router graph represents a~~the~~ topology of the peer-to-peer network; and~~network.~~

wherein the directory server can use the MAC address to determine if any other clients are on a same subnet as the first client.

2. (Currently Amended) The method of claim 1, further comprising:

performing a second tracerouting operation between the first client and a second client; and

sending the second traceroute to the directory server.

3. (Cancelled)

4. (Original) The method of claim 1, further comprising:

sorting a list of addresses for routers received at the directory server from the traceroutes; and

using the sorted list to determine which addresses are assigned to which routers, wherein each router has two or more network interfaces and each interface has an address.

5. (Original) The method of claim 1, further comprising using the router graph to optimize data transfer within the peer-to-peer network.

6. (Previously Presented) The method of claim 1, further comprising classifying the first client as a member of a router group based on a first public address found in the traceroute, wherein the router group is a collection of clients that communicate through a common router.

7. (Original) The method of claim 1, further comprising removing information from the router graph if the information has not been validated for a specified period of time.

8. (Currently Amended) A computer-readable storage medium storing instructions that when executed by a computer cause the computer to perform a method for determining a network topology in a peer-to-peer network, the method comprising:

performing a tracerouting operation to obtain a traceroute from a first client to a directory server, wherein a traceroute is a map of a path through which a packet travels between the first client and the directory server, including addresses of routers through which the packet travels;

determining a MAC address of a gateway of the first client;

sending the traceroute and the MAC address to the directory server from the first client; and

using the traceroute at the directory server to build a router graph;~~graph,~~

wherein the router graph represents ~~a~~the topology of the peer-to-peer network; and~~network.~~

wherein the directory server can use the MAC address to determine if any other clients are on a same subnet as the first client.

9. (Currently Amended) The computer-readable storage medium of claim 8, wherein the method further comprises:

performing a second traceroutingoperation between the first client and a second client; and

sending the second traceroute to the directory server.

10. (Cancelled)

11. (Original) The computer-readable storage medium of claim 8, wherein the method further comprises:

sorting a list of addresses for routers received at the directory server from the traceroutes; and

using the sorted list to determine which addresses are assigned to which routers, wherein each router has two or more network interfaces and each interface has an address.

12. (Original) The computer-readable storage medium of claim 8, wherein the method further comprises using the router graph to optimize data transfer within the peer-to-peer network.

13. (Currently Amended) The computer-readable storage medium of claim 8, wherein the method further comprises classifying the first client as a member of a router group based on ~~a~~the first public address found in the traceroute, wherein the router group is a collection of clients that communicate through a common router.

14. (Original) The computer-readable storage medium of claim 8, wherein the method further comprises removing information from the router graph if the information has not been validated for a specified period of time.

15. (Currently Amended) An apparatus for determining a network topology in a peer-to-peer network, the apparatus comprising:

a tracerouting mechanism configured to perform a tracerouting operation to obtain a traceroute from a first client to a directory server, wherein a traceroute is a map of a path through which a packet travels between the first client and the directory server, including addresses of routers through which the packet travels;

a determination mechanism configured to determine a MAC address of a gateway of the first client;

an upload mechanism configured to send the traceroute and the MAC address to the directory server from the first client; and

a graph building mechanism configured to use the traceroute at the directory server to build a router graph;~~graph,~~

wherein the router graph represents the topology of the peer-to-peer network; and~~network.~~

wherein the directory server can use the MAC address to determine if any other clients are on a same subnet as the first client.

16. (Currently Amended) The apparatus of claim 15, wherein the tracerouting mechanism is further configured to perform a second tracerouting operation between the first client and a second ~~client~~client, and is further configured to send the second traceroute to the directory server.

17. (Cancelled)

18. (Original) The apparatus of claim 15, further comprising:

a sorting mechanism configured to sort a list of addresses for routers received at the directory server from the traceroutes; and

a determination mechanism configured to use the sorted list to determine which addresses are assigned to which routers, wherein each router has two or more network interfaces and each interface has an address.

19. (Original) The apparatus of claim 15, further comprising an optimization mechanism configured to use the router graph to optimize data transfer within the peer-to-peer network.

20. (Currently Amended) The apparatus of claim 15, further comprising a classification mechanism configured to classify the first client as a member of a router group based on a~~the~~ first public address found in the traceroute, wherein the router group is a collection of clients that communicate through a common router.

21. (Original) The apparatus of claim 15, further comprising a removal mechanism configured to remove information from the router graph if the information has not been validated for a specified period of time.